

RANDOM FUNCTION

`RAND(x : INTEGER)` RETURNS `REAL`
returns a real number in the range 0 to x (x not inclusive).

Example: `RAND(87)` could return 35.43

0 - 87

(b) A student is learning about random number generation.

She is investigating how many times the random function needs to be called before every number in a given series is generated.

She is using **pseudocode** to develop a procedure, `TestRand()`, which will:

- use the random number function to generate an integer value in the range 1 to 50 inclusive
- count how many times the random function needs to be called before all 50 values have been generated
- output a message giving the number of times the random function was called.

NOTE: Whenever counting and random functions are together you should always use array.

Randomnumber = index

1

0

Array 1 till 50

2

0

Initialize for comparison

3

⋮

50

PROCEDURE Testrand ()

Declare Num : Array [1:50] of Integer

FOR index = 1 to 50

Num[index] = 0

ENDFOR

Attempts = 0

Numfound = 0

While Numfound < 50

Randomnumber = 1 + INT (Rand (50))

Attempts = Attempt + 1

IF Num [Randomnumber] = 0

Then

Num [Randomnumber] = Randomnumber

Numfound = Numfound + 1

END IF

ENDWHILE

Out ut ' Number of random functions call are ', Attempt

ENDPROCEDURE .